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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,461	12/03/2003	Paul G. Wilson	24170759.2	5873

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PATENT DEPARTMENT
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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

✓

Office Action Summary	Application No. 10/726,461	Applicant(s) WILSON ET AL.	
	Examiner Jennifer A. Boyd	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-25 and 51 - 52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-25 and 51 - 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 26, 2006 has been entered. The Applicant's Amendments and Accompanying Remarks, filed April 26, 2006, have been entered and have been carefully considered. Claims 1, 4 – 25 and 51 – 52 are amended and pending. In view of Applicant's amendments, the Examiner withdraws all previously set forth rejections. Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1, 4, 7, 14 – 15, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gill et al. (US 5,158,824).

Gill is directed to a fibrous glass mat (Title).

As to claims 1, 14 and 20, Gill teaches a non-woven fibrous mat of generally random fiber orientation with built up lines or strips of fiber formed therein directionally oriented to enhance the strength and/or appearance of the mat. Gill teaches that the mat is made by a wet mat process (wet-laid) (Abstract). The Examiner equates the area of the mat comprising

generally random fiber orientation is equated to the first surface and a strip of directionally oriented fiber is equated to the second surface. The Examiner considers the surfaces to be “opposed” as claimed by Applicant because they are opposite each other. See Figure 3.

As to claim 4 and 15, Gill teaches that the fibers may comprise glass or synthetic fibers (column 2, lines 55 – 69).

As to claims 7 and 18, Gill teaches that the mat further comprises a binder material (column 4, lines 10 – 20).

Claim Rejections - 35 USC § 103

4. Claims 5 - 6, 11 – 13, 16 – 17, 21 – 24 and 51 – 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gill (US 5,158,824).

As to claims 5 - 6, 11 – 13, 16 – 17, 21 – 24 and 51 - 52, Gill discloses the claimed invention except for that fibers have a diameter ranging from 0.00001 inches to 0.0300 inches as required by claims 5 and 16, the fibers have a length ranging from 0.10 inches to about 1.5 inches as required by claims 6 and 17, the first layer comprises a thickness of about 50% of the total thickness of the fiber material as required by claims 11 and 21, the fiber material has a weight of 1.6 lbs/sq foot as required by claims 12 and 22, the overall thickness of the fiber material is about 0.035 inches, the thickness of the first nonwoven layer is about 0.002 to 0.010 inches as required by claims 13 and 23, and the first and second pluralities of fibers are both horizontally dispersed to a substantially uniform thickness as required by claims 24 and 52 and the directionally aligned fibers comprising the first surface having an overall thickness substantially equal to the thickness of one of the linear formations as required by claim 51. It should be noted that fiber diameter, layer thickness, layer thickness uniformity and layer weight

are result effective variables. As the fiber diameter decreases, the material becomes more flexible and fragile. As the fiber length decreases, the material becomes more flexible. As the thickness and weight of the first layer increases, the material becomes stiffer. As the thickness becomes more uniform, the material has superior mechanical properties. Absent unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the fiber diameter, fiber length, layer thickness, layer thickness uniformity and layer weight since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the fiber diameter, fiber length, layer thickness and uniformity and the layer weight in order to create a strong, thin and flexible composite.

As to claims 12 and 22, although Gill does not explicitly teach the claimed the tear strength under the Elmendorf Tear Test of about 393 g mean tear, it is reasonable to presume that the above property is inherent. Support for said presumption is found in the use of like materials (i.e. a composite comprising a mat of directionally oriented strands and a layer of a randomly oriented fibers held together by a binder) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Gill product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

5. Claims 8 – 10, 19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gill (US 5,158,824).

Gill teaches a non-woven fibrous glass mat having a binder (column 4, lines 10 – 15 and Title). Gill fails to teach that the mat comprises about 5 – 30% binder as required by claims 8 and 25 and that the binder is an organic compound as required by claim 9, specifically acrylic latex, urea-formaldehyde, SBR latex, acrylic emulsions and mixtures thereof as required by claims 10 and 19.

Bondoc is directed to a glass fiber mat with improved binder (Title). Bondoc teaches using urea-formaldehyde and styrene-butadiene latex as the binder where the binder comprises about 10 – 30% by weight. Bondoc teaches that the latex is a stable emulsion which makes it highly advantageous in commercial use (column 3, lines 25 – 25). Bondoc teaches that the mat has excellent tensile strength and flexibility (claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a urea-formaldehyde and styrene-butadiene latex binder as suggested by Bondoc as the binder in Gill motivated by the desire to use a suitable binder to create a glass mat with excellent tensile strength.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use 10 – 30% by weight binder as suggested by Bondoc in the mat of Gill motivated by the desire to create a glass mat with excellent tensile strength.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 4 – 25 and 51 - 52 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jennifer Boyd
June 29, 2006

W. A. Riddick
W. A. Riddick
Primary Examiner
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